

**AMENDMENT TO THE CLAIMS:**

The following claim set replaces all prior versions, and listings, of claims in the application:

1. – 20. (Canceled)
21. (New) A method of cleaning heat exchange surfaces of a heat exchange system, comprising the steps of:
  - (a) leading an exhaust gas stream by the heat exchange surfaces;
  - (b) cleaning sequentially different parts of the heat exchange surfaces with cleaning equipment having an operation parameter status, wherein particles are released from the parts being cleaned, and the released particles are entrained with the exhaust gas stream;
  - (c) measuring the amount and/or type of the released particles entrained with the exhaust gas stream so as to create particle measurement data, and
  - (d) linking together and storing into an electronic memory the location information of the parts of the heat exchange surfaces being cleaned and the particle measurement data created during the cleaning so as to create information of the fouling on the heat exchange surfaces as a function of the location of the heat exchange surfaces.
22. (New) The method according to claim 21, further comprising the steps of storing the operation parameter status into the electronic memory, and linking the operation parameter status together with the location

information of the part being cleaned and the particle measurement data created during the cleaning of the part.

23. (New) The method according to claim 22, wherein the operation parameter status comprises the status of at least one operation parameter selected from the group consisting of identification data of the cleaning equipment, location information of the cleaning equipment, operational status of the cleaning equipment, speed of the cleaning equipment, and effect of the cleaning equipment.
24. (New) The method according to claim 21, wherein the cleaning equipment comprises a soot blower.
25. (New) The method according to claim 21, wherein the cleaning equipment comprises at least one selected from the group consisting of a steam based soot blower, an acoustic soot blower, an air gun, a hammer cleaner, and a mechanical cleaner.
26. (New) The method according to claim 21, wherein the measuring step (c) comprises measuring the mass flow of particles in the exhaust gas stream.
27. (New) The method according to claim 21, further comprising the step of optimizing the time lapse between two cleanings of different parts of the heat exchange surfaces by using the information of the fouling as a function of the location of the heat exchange surfaces.

28. (New) The method according to claim 21, further comprising the step of optimizing the cleaning speed of the cleaning equipment used for cleaning different parts of the heat exchange surfaces by using the information of the fouling as a function of the location of the heat exchange surfaces.
29. (New) The method according to claim 21, further comprising optimizing the operation parameters for the cleaning of different parts of the heat exchange surfaces by using the information of the fouling as a function of the location of the heat exchange surfaces.
30. (New) The method according to claim 27, 28 or 29, wherein optimizing is based on one or more of variable of a tendency of fouling on different parts of the heat exchange surfaces, and a carbon content in the ash.
31. (New) The method according to claim 21, further comprising using the information of the fouling as a function of the location of the heat exchange surfaces for estimating the tendency of fouling on the heat exchange surfaces.
32. (New) The method according to claim 21, further comprising using the information of the fouling as a function of the location of the heat exchange surfaces for estimating the distribution of fouling on the heat exchange surfaces.
33. (New) The method according to claim 21, further comprising the steps of:

measuring particle distribution on a cross-section of an exhaust gas channel,  
comparing the measured data of the particle distribution with previous measurements of the particle distribution, and  
using the result of the comparison in determining the distribution and tendency of fouling on the heat exchange surfaces.

34. (New) The method according to claim 21, wherein measuring of the amount and/or type of the released particles in the exhaust gas stream is made with an Electric Charge Transfer measurement system.
35. (New) The method according to claim 34, further comprising:  
producing AC and DC signals representing particles in the exhaust gas stream by the Electric Charge Transfer measurement system, and  
determining the tendency and distribution of fouling on the heat exchange surfaces by using the AC and DC signals.
36. (New) The method according to claim 34, further comprising estimating the amount of unburned carbon in the ash flow in the exhaust gas stream by using the AC and DC signals produced by the Electric Charge Transfer measurement system.
37. (New) A system for cleaning heat exchange surfaces of a heat exchange system, comprising:

cleaning equipment arranged to sequentially clean different parts of the heat exchange surfaces, so as to release particles from the cleaned parts of the heat exchange surfaces;

means for measuring the amount and/or type of released particles in the exhaust gas stream so as to create particle measurement data;

means for linking together and storing in an electronic memory the location information of the parts of the heat exchange surface being cleaned and the particle measurement data created during the cleaning of said parts so as to create information of the fouling on the heat exchange surfaces.

38. (New) The system according to claim 37, comprising means for detecting operation parameter status of the cleaning equipment.
39. (New) The system according to claim 37, comprising means for controlling the cleaning equipment on the basis of the information of the fouling on the heat exchange surfaces.
40. (New) The system according to claim 37, wherein the cleaning equipment comprises a soot blower.
41. The system according to claim 37, wherein the cleaning equipment comprises at least one selected from the group consisting of a steam based soot blower, an acoustic soot blower, an air gun, a hammer cleaner, and a mechanical cleaner.